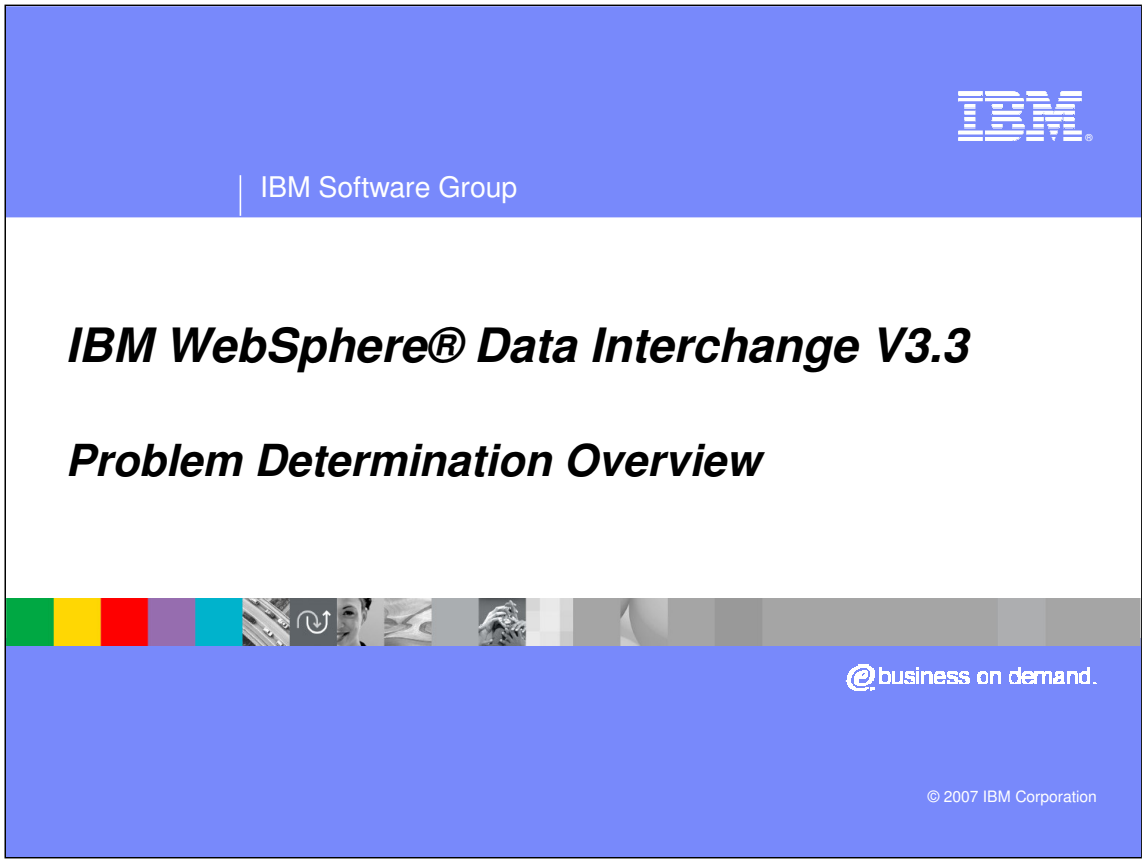

This presentation will give an overview for problem determination.

Agenda

- Self help
- WDI support process
- Problem determination techniques
- Interpreting WDI messages
- Case studies

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The presentation will review options for self help, the WebSphere Data Interchange (WebSphere Data Interchange) support process, problem determination techniques, interpreting WDI messages, and review some case studies.

Section

Self Help

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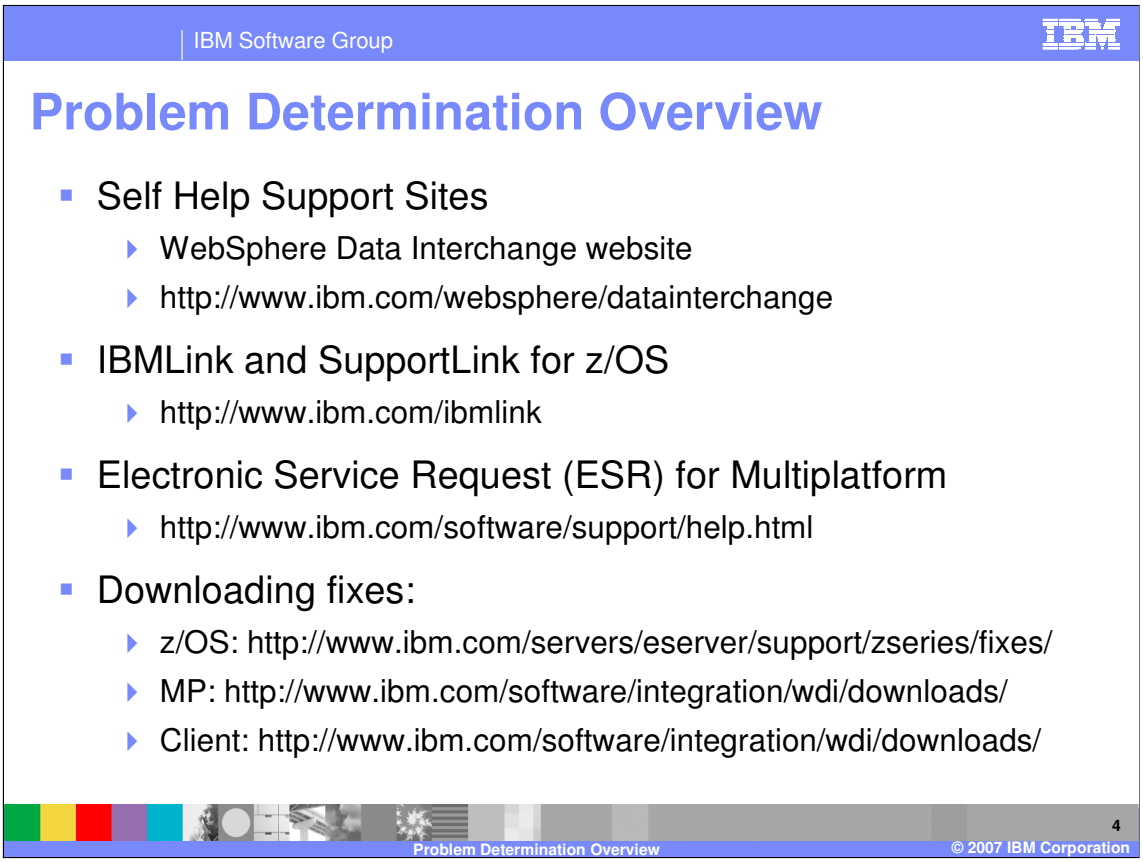
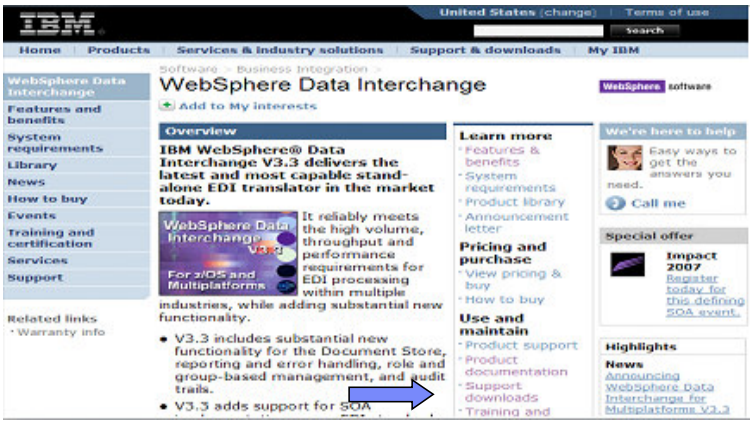


The following URLs can be used to get help, request electronic service requests, and download code fixes.

Problem Determination Overview

- Self Help Support Sites (Continued)
  - http://www.ibm.com/websphere/datainterchange



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The WebSphere Data Interchange website contains a support downloads selection.

Problem Determination Overview

- Self Help Support Sites continued
  - Key features of WDI website:
    - Downloads: Click on, “Standards, host, client & Fix Pack downloads”
      - EDI Standards
      - Multiplatform fixes
      - WDI Client fixes
    - Library
      - WDI 3.3.1 Manuals and publications
      - WDI 3.2.1 Manuals and publications
    - Support
      - Search non-defect FAQ database, a.k.a. Technotes
      - Search defect APAR database
      - Product Requirement Form

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The WebSphere Data Interchange website contains features for downloading standards, publications, as well as technical notes, defect database, and product requirements.

Problem Determination Overview

- Self Help Support Sites continued
  - Search Capabilities
    - By default, search includes Technotes (FAQ), APARs (defect),
    - Redbooks, etc. for only WDI
  - Check "Solve a problem" to limit search to only Technotes and APARs
    - – Next page provides refined search by “Document type”
  - Alternatively, when searching for defects, limit search by platform:
    - z/OS: Precede search string with 5655I4000
    - MP: Precede search string with 5724C5001

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Search capabilities are available. To limit the search use the “Solve a problem” selection or limit the search by platform.

Problem Determination Overview

- Self Help Support Sites continued
  - Other search features
    - 'Search all software support' to go beyond WDI
    - Advanced search offers
      - Boolean options
      - Limit results to Exclude/include APARs
      - Limit results within components
        - WDI 3.2 Client
        - WDI 3.2 for z/OS
        - WDI 3.2 MP
      - Limit results by modifying dates

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Using advanced searching function offers more selections to limit the search.

Problem Determination Overview

- Search Capabilities Example

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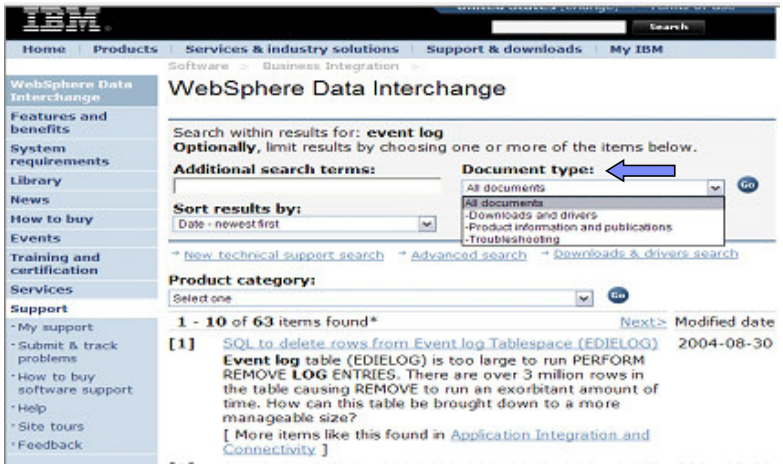
This is an example of limiting the search to the term “event log”.

Problem Determination Overview

- Search Capabilities Example



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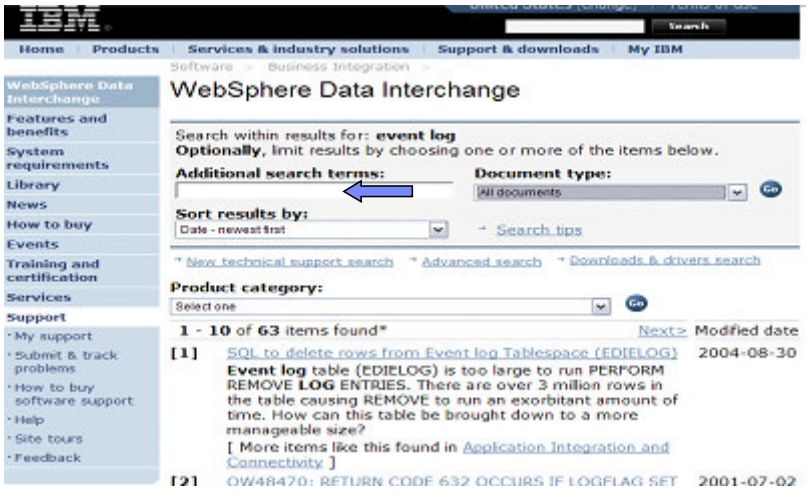
There is a drop down menu to limit the search by document type.

Problem Determination Overview

- Search Capabilities Example



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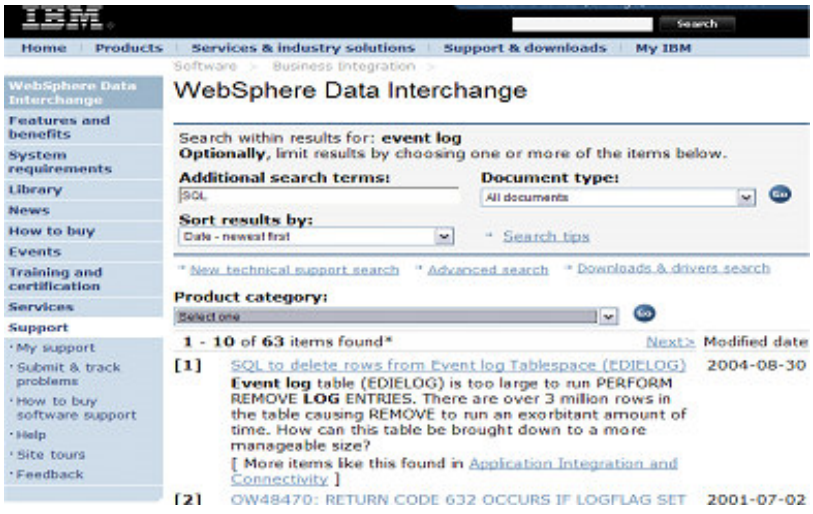
Additional search terms may be entered.

Problem Determination Overview

- Search Capabilities Example



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This is the results of our example using “event log”, “SQL”, and all documents.

Section

WebSphere Data Interchange Support Process

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Problem Determination Overview

- WDI Support Process
  - Begins by opening a Problem Management Record (PMR)
    - USA Hotline: 1 -800-IBM-SERV (1-800-426-7378)
      - Voice support
      - Two hour call-back between 8am–5pm in your time-zone for all severities. Off-shift support for severity 1.
      - Service agreement required for how-to and usage questions
    - Worldwide directory: http://www.ibm.com/planetwide/
  - Electronic problem submission
    - Electronic Technical Response (ETR) for z/OS customers
      - IBMLink, ServiceLink and SoftwareXcel - service agreement required
      - http://www.ibm.com/services/us/its/pdf/swxcel.pdf
    - Electronic Service Request (ESR) for multiplatform
      - Passport Advantage - service agreement required
      - http://www.ibm.com/software/passportadvantage

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The Support process begins by opening a Problem Management Record (PMR). This can be done using the support hot line telephone support or electronic submission.

Problem Determination Overview

- WDI Support Process
  - Define the problem
  - Gather background Information
    - Software levels of relevant products
    - What steps led to the failure?
    - Can the problem be recreated? Recreation steps?
    - Have any changes been made to the system?
    - Were any messages or other diagnostic information produced?
  - Gather relevant diagnostic information
    - Print file, joblog, operating system messages, storage dumps,
    - traces, etc.
  - Determine the business impact, i.e. severity level

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When reporting a problem define the issue as precisely as possible, provide background information such as software levels, recreation steps, recent changes to the environment, error messages produced. Diagnostic information for example the print file, job log, system dumps and WebSphere Data Interchange traces are also needed. The impact on your business identifies the severity level.

Problem Determination Overview

- WDI Support Process
  - Severity Levels
    - Severity 1 - Critical Impact/System Down: Business critical software component is inoperable or critical interface has failed. This indicates you are unable to use the program resulting in a critical impact on operations. This condition requires an immediate solution.
    - Severity 2 - Significant business impact, this indicates the program is usable but is severely limited.
    - Severity 3 - Some business impact, this indicates the program is usable with less significant features (not critical to operations) unavailable.
    - Severity 4 - Minimal business impact, this indicates the problem causes little impact on operations or that a reasonable circumvention to the problem has been implemented.

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The Severity levels are listed here.

Problem Determination Overview

- WDI Support Process
  - Determine what files Support may need
    - If problem is reproducible:
      - Isolate problem to specific input transaction or message
      - Gather input file, print file, joblog, and export of map in tagged format selecting all associated objects
      - Include incorrect output file and expected output, if applicable
    - If not reproducible, as in a sporadic ABEND:
      - Gather input file, print file (joblog), and export of map in tagged format selecting all associated objects
      - Capture dump dataset:
      - z/OS add SYSUDUMP and CEEDUMP to JCL
      - AIX core dump
      - Windows application exception dump

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This is a list of files that may be needed to identify the problem.

Problem Determination Overview

- WDI Support Process
  - Post test files to Support Center's FTP server:
    - ECuRep: Enhanced Customer Data Repository:
      - http://www.ibm.com/de/support/ecurep/mvs.html
    - Replacement for testcase.software.ibm.com

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You may post the files needed to reproduce the problem to the Support Center's FTP server.

Problem Determination Overview

- WDI Support Process
  - Have the following information ready when calling or submitting a problem:
    - IBM Customer Number
      - The machine type/model/serial number
      - Company name
      - Contact name
      - Preferred means of contact (voice or email)
      - Background and diagnostic information
    - Support handbook
      - http://techsupport.services.ibm.com/guides/webhndbk.pdf
      - Fill out the “Problem Identification Worksheet” on page 23

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This information is required when submitting a problem.

Problem Determination Overview

- WDI Support Process
  - Defects managed via Authorized Program Analysis Reports (APAR) process
  - APAR is routed to appropriate development team.
  - If defect has high impact, a code fix is created for existing version/release and delivered via:
    - Program Temporary Fix (PTF) for z/OS customers
    - Corrective Service Delivery (CSD) for Multiplatform
  - If the defect has low impact, which does not require an immediate, permanent fix, we may defer the fix for a future release.

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When a defect is identified, an Authorized Program Analysis Report (APAR) is created. The APAR is routed to the appropriate development team.

Code fixes are delivered via Program Temporary Fix (PTF) and Corrective Service Delivery (Service Pack). There are situations where the defect may be deferred to a future release.

Section

Problem Determination Techniques

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Problem Determination Overview

- Problem Determination Techniques
  - New map development
  - Incorrect output
  - Abnormal end
  - Runs on one system but not another
  - Interpreting WDI messages

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This is a list of common problems.

Problem Determination Overview

- New map development
  - Unexpected output
  - DT map, run with TRACELEVEL(A1) on PERFORM
    - Add EDIDTTRC DD to JCL
  - Send/Receive map: &SET DIVARTRACE 1
    - &SET DIEXPTRACE 1
  - Print map from WDI Client for a different perspective
  - Print data format, if applicable, to verify field offsets

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Data transformation maps have a tracing function that will trace the message flow. The A1 trace will trace variables during the translation. Send Receive maps have a tracing function that will trace the mapping execution.

Problem Determination Overview

- Incorrect output – existing map suddenly fails
  - What changed?
    - Was map changed or recompiled?
    - Was anything recently upgraded?
    - WDI server, client, DB2, WMQ, operating system, etc.
  - Check input for anomalies
  - Isolate input to single failed transaction or message
  - DT map, run with TRACELEVEL(A1) on PERFORM
    - Z/OS: Add EDIDTTRC DD to JCL
    - AIX or Windows: Add EDIDTTRC 'Set file' to command file
  - Send/Receive map: &SET DIVARTRACE 1
    - &SET DIEXPTRACE 1

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With an existing map that suddenly fails, determined if anything has changed. Check for input file for situations not common. Try to isolate the message that is failing. Use the tracing functions to help identify where the problem occurrs.

Problem Determination Overview

- Abnormal end
  - Check System Server Platform under view menu
    - If Platform mismatch, recompile map and re-run translator
  - z/OS job completion = Sxxx or Uyyy
    - System ABEND lookup in documentation: http://www.ibm.com/servers/resourcelink
    - User ABEND pertains to DT and are likely from LE
    - Check steplib
    - Check memory usage
    - Check XML Toolkit
  - AIX or Windows -- Signal 11 or core dump
    - Check libpath or path settings
    - Check memory usage

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For abends, try recompiling the map and re-execution. Check the job completion code and JCL setup for z/OS jobs. For AIX and Windows check path settings and memory usage.

Problem Determination Overview

- Runs on one system but not another
  - Compare maintenance levels
    - z/OS: Compare PTF listings from system programmer
    - Windows – check the registry
      - HKEY_LOCAL_MACHINE\SOFTWARE\IBM\WebSphere Data Interchange
      - key CurrentVersion=3.2.X, where X is the latest CSD number
    - AIX – issue command "lslpp -L IBMWDIServer32“
  - Check map compile date
  - Check for differences in system capacity

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With system mismatch, compare the maintenance levels, check the mapping compile date, and system capacity.

Problem Determination Overview

- Interpreting WDI messages
  - Messages start with two character “service” designation, e.g. “TR” for Translator, “PS” for profile services
  - Check WDI Messages and codes for further information
  - Messages and Codes also lists return codes from each service
  - Messages and Codes Appendix A. provides a Translator Message (TRnnnn) example under, “Interpreting log entries”

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WebSphere Data Interchange messages start with a two character designation. For example, Translator is “TR” and “PS” is profile services. The WebSphere Data Interchange Messages and codes manual contains useful information for interpreting messages.

Section

Case Studies

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Problem Determination Overview

- Case 1
  - ABEND U4036 – z/OS
    - Similar to system abend S0C4
    - If using IEFBR14, job condition code = 12
    - Pertains to Data Transformation only LE intercepted abend and writes dump to CEEDUMP
    - Likely cause, getmain failure
    - Check virtual storage in joblog
      - VIRT 728K SYS 360K **EXT 124100K** SYS 9800K
      - EXT is storage used above 16M line and is the key measure
      - Consider PAGE(Y) – maintenance required
      - Consider pageable AMM – maintenance required
    - REGION=0M only gives what happens to be available
    - REGION=nM assures that you get “n” megabytes

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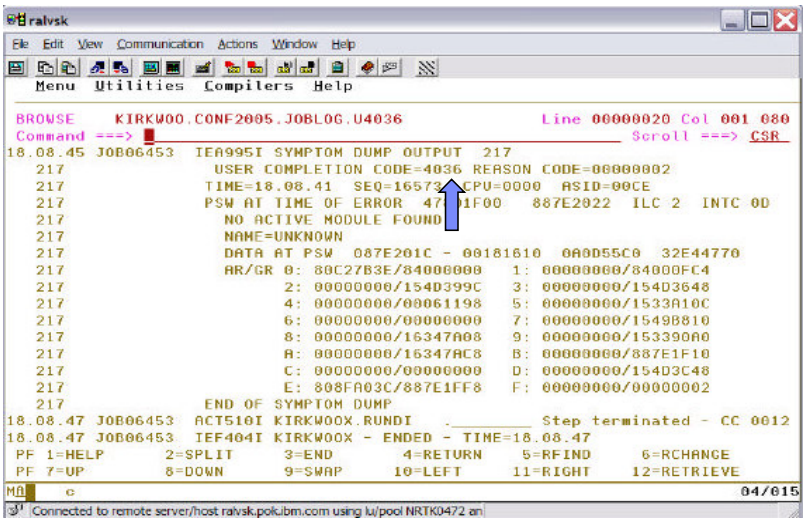
This is case study 1 for z/OS.

Problem Determination Overview

- Case 1



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This is the abend code location.

Problem Determination Overview

- Case 2
  - Initialization failure
    - Pertains to any WDI utility function
    - Check for DB2 messages
      - Lookup SQLCODE and REASON codes in DB2 Messages and Codes on Resource Link
  - Z/OS job step Condition code = 120
    - DB2 message written to job log via WTO
    - Program failed attempting to initialize the Service Director

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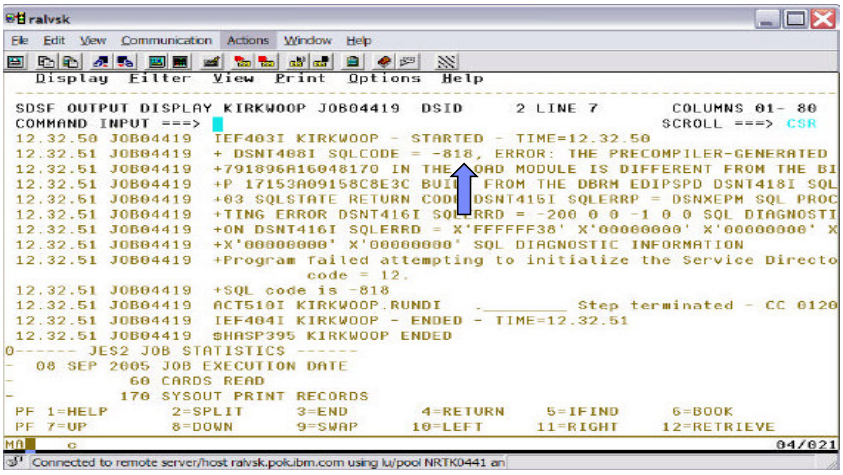
This is case study 2 for z/OS.

Problem Determination Overview

- Case 2



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This is the SQL Code location.

Problem Determination Overview

- Case 2
  - MultiPlatform returns RC=8 ERC=32
    - PS00400 Profile Services database error
    - Command Line window from ediservr provides reason
    - WDI adapter command window or .trace file

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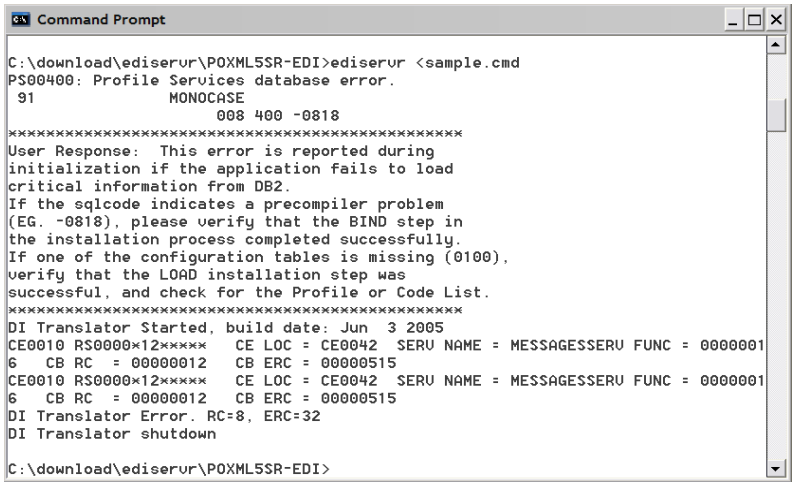
This is case study 2 for Multiplatform.

Problem Determination Overview

- Case 2



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This is the results of the translation execution.

Problem Determination Overview

- Case 3
  - Data Transformation rule not found – EDI to ADF
    - UT0016 – STD (Standard) type control string not found
    - RU0001 – no active rule found
    - MB0099 – data transformation failed

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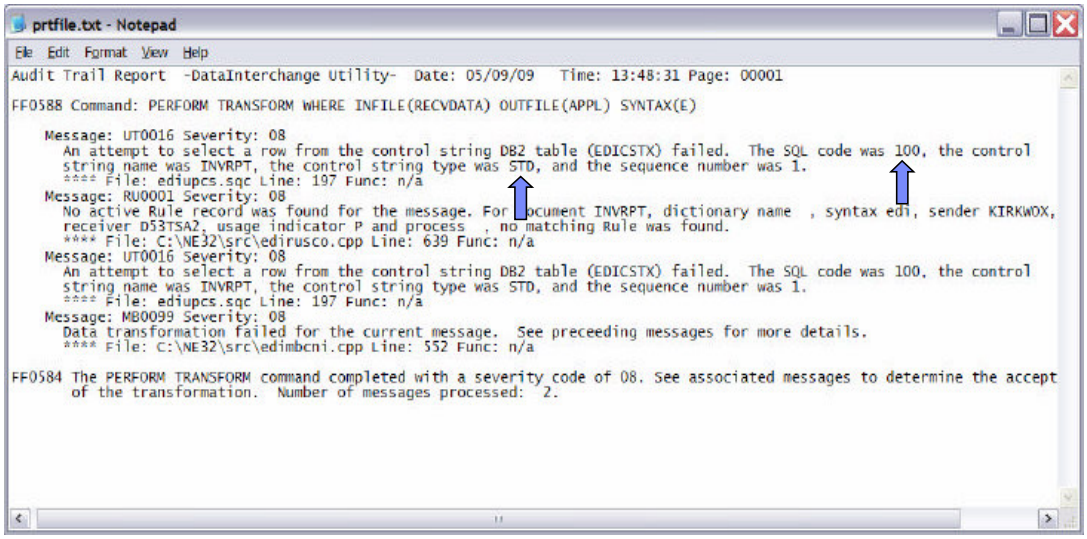
This is case study 3.

Problem Determination Overview

- Case 3



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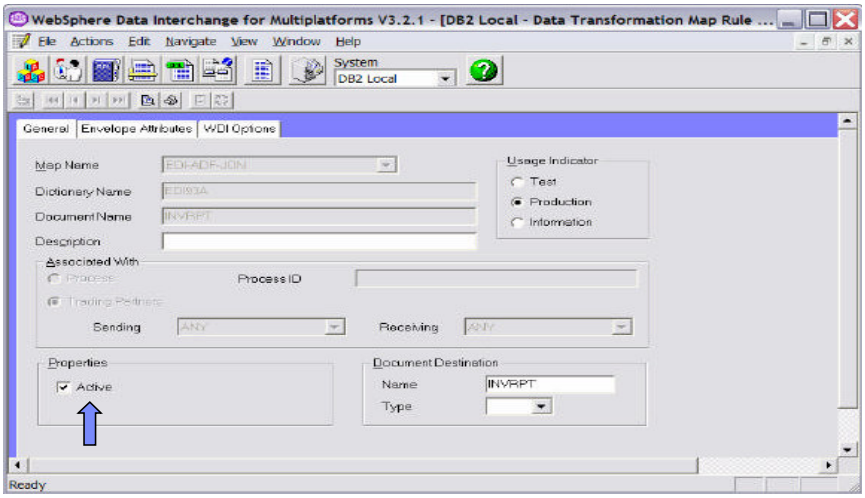
The print file reports SQL code 100 for control string type Standard (STD).

Problem Determination Overview

- Case 3



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Check the Data Transformation Rule to ensure it is active.

Problem Determination Overview

- Case 3
  - EDI input:

UNB+UNOA:2+D53T KIRKWOX:ZZ+D53T
D53TSA2:ZZ+050513:0912+111‘

UNH+11+INVRPT:D:93A:UN:EAN003‘

: Version

:

UNT+14+11'

UNZ+1+111'

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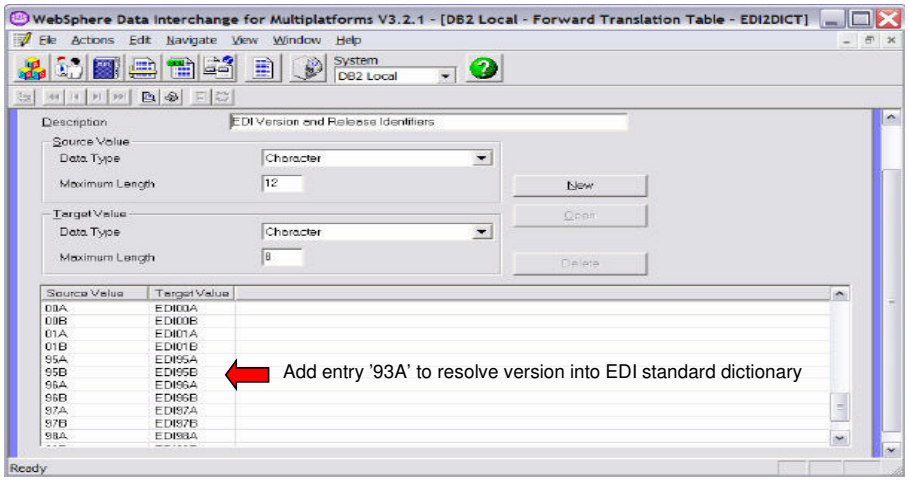
Check the input. In this example, you have EDIFACT with 93A for release number.

Problem Determination Overview

- Case 3



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Data transformation uses the EDI2DICT forward translation table to identify the standard dictionary and document. The value “93A” is missing from the table.

Problem Determination Overview

- Case 3
  - Alternatively, add DICTIONARY(EDI93A) to the PERFORM statement
    - All Input messages then must use the same standard dictionary
    - Not as flexible as using EDI2DICT forward translation table
  - Optionally, sending and/or receiving trading partner can be used to be selective when finding a matching rule
    - Sending trading partner commonly used
    - Otherwise, use ANY for both sending and receiving trading partners

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An alternative is to add DICTIONARY keyword to the PERFORM command but this is not as flexible as using the EDI2DICT table.

Problem Determination Overview

- Summary
  - Utilize self help websites
  - New Technotes are being added
  - Still need help? Call WDI support
  - Review problem determination techniques to prepare for the call
  - Someday you will encounter one of these case studies

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For problem determination use self help and technical notes. If you cannot resolve the problem call WebSphere Data Interchange support. Review the techniques described here and prepare for the call.

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